

Item # 8
April 20, 2011
Energy Commission Business Meeting
AGRICULTURAL WASTE SOLUTIONS, INC.
Grant Agreement ARV-10-043
For
San Jacinto Biofuels Production # 1
in Riverside County, California

Summary

Agricultural Waste Solutions (AWS) will partner with Scott Brothers Dairy to assemble, operate and test a modular, skid-mounted demonstration pilot plant that will convert dairy waste to renewable diesel. The diesel produced in this process will be tested through use in their dairy farm vehicles. If successful, AWS will partner with the 26 dairies in the Western Riverside Agricultural Coalition to plan for the commercial scale application of this technology in the Moreno Valley area.

This project will demonstrate the feasibility of a modular technology for converting dairy waste to liquid fuel that includes a proprietary solids separation process, a solids gasification process, and a Fischer-Tropsch process for conversion of syngas to renewable diesel. The conversion technology also provides the potential to alleviate the waste water discharge, air quality, and salt emissions impacts associated with dairy waste disposal in California. By testing the use of the renewable diesel in their dairy farm vehicles, AWS will demonstrate the feasibility of a ready-made market for their fuel.

The Energy Commission is providing \$ 658,220 in Alternative and Renewable Fuel and Vehicle Transportation program funds. The project participants are providing \$1,082,937 additional match funding.

Project Benefits

Successful completion of this project could provide the foundation for significant dairy waste-to-fuel production capacity in both Moreno Valley and throughout California. At commercial scale, the technology could produce 6.8 million gallons of renewable diesel per year from the 35,000 dairy cows in Western Riverside County Agricultural Coalition (WRCAC). Each of the 3- to-5 commercial facilities needed to serve these 26 farms would result in 10 full time jobs for facility operation, which will help stabilize local on-farm employment.

California statewide dairy production involves some 1.7 million cows. Harnessing the dairy waste from all of these dairies could produce approximately 330 million gallons of renewable diesel per year. It also provides a means of significantly reducing greenhouse gas emissions associated with dairy operations, while substantially reducing water and salt discharges and reclaiming dairy wastewater for use in irrigation.

Greenhouse gas emission reductions for fuel produced by this pilot plant are estimated to be 2.75 tons per year of methane and .15775 tons per year of nitrous oxide. Because methane and nitrous oxide have significantly stronger Global Warming Potential than CO₂, these reductions translate to CO₂-equivalent reductions of 57.75 tons/year and 48.9 tons/year respectively. At commercial scale, the diversion of manure from the 35,000 cows in WRCAC would result in reductions of 851,050 tons/year CO₂E of methane and 720,666 tons/year CO₂E of nitrous oxide.

Participants

AWS principals have seven years experience in developing and demonstrating this technology in southern California. Scott Brothers Dairy is a 4th generation dairy farm which actively engages in environmental stewardship in its operations.

Project Milestones

AWS expects to assemble its Demonstration Pilot Plant by December, 2011, and complete the pilot plant test runs by February 2014.